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DEPARTMENT OF COMMERCE

Bureau of Industry and Security

15 CFR Part 774

[Docket No. 170906871-7871-01]

RIN 0694-AH46

Revisions to the Export Administration Regulations Based on the 2017 Missile Technology Control Regime Plenary Agreements

AGENCY: Bureau of Industry and Security, Commerce.

ACTION: Final rule.

SUMMARY: The Bureau of Industry and Security (BIS) is amending the Export Administration Regulations (EAR) to reflect changes to the Missile Technology Control Regime

(MTCR) Annex that were agreed to by MTCR member countries at the October 2017 Plenary in Dublin, Ireland, and the May 2017 Technical Experts Meeting (TEM) in Stockholm, Sweden. This final rule revises seventeen Export Control Classification Numbers (ECCNs) to implement the changes that were agreed to at the meetings and to better align the missile technology (MT) controls on the Commerce Control List (CCL) with the MTCR Annex.

DATES: This rule is effective [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER].

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SUPPLEMENTARY INFORMATION:

Background

The Missile Technology Control Regime (MTCR or Regime) is an export control arrangement among 35 nations, including most of the world's suppliers of advanced missiles and missile-related equipment, materials, software and technology. The regime establishes a common list of controlled items (the Annex) and a common export control policy (the Guidelines) that member countries implement in accordance with their national export controls. The MTCR seeks to limit the risk of proliferation of weapons of mass destruction by controlling exports of goods and technologies that could make a contribution to delivery systems (other than manned aircraft) for such weapons.

In 1993, the MTCR's original focus on missiles for nuclear weapons delivery was expanded to include the proliferation of missiles for the delivery of all types of weapons of mass destruction (WMD), *i.e.*, nuclear, chemical and biological weapons. Such proliferation has been identified as a threat to international peace and security. One way to address this threat is to maintain vigilance over the transfer of missile equipment, material, and related technologies usable for systems capable of delivering WMD. MTCR members voluntarily pledge to adopt the Regime's export Guidelines and to restrict the export of items contained in the Regime's Annex. The Regime's Guidelines are implemented through the national export control laws, regulations and policies of the regime members.

Amendments to the Export Administration Regulations (EAR)

This final rule revises the Export Administration Regulations (EAR) to reflect changes to the MTCR Annex agreed to at the October 2017 Plenary in Dublin, Ireland, and changes resulting from the May 2017 Technical Experts Meeting (TEM) in Stockholm, Sweden. References are provided below for the MTCR Annex changes agreed to at the meetings that correspond to the EAR revisions described below. This rule also makes changes to the Commerce Control List (CCL) (Supplement No. 1 to part 774 of the EAR) to conform with the MTCR Annex. All of the changes in this final rule align the MT controls on the CCL with the MTCR Annex. In the discussion below, BIS identifies the origin of each change in the regulatory text of this final rule by using one the following parenthetical phrases: (Dublin 2017 Plenary), (Stockholm 2017 TEM), or (Changes to Align with MTCR Annex).

Amendments to the Commerce Control List (CCL)

This final rule amends the CCL to reflect changes to the MTCR Annex by amending seventeen ECCNs, as follows:

ECCN 1B117. This final rule amends ECCN 1B117 by revising the heading to remove the criteria for which “batch mixers” are controlled under this entry and moves the criteria to the new “items” paragraphs a and b in the List of Items Controlled section. This final rule, as a conforming change, redesignates existing “items” paragraphs a and b as paragraphs c and d (including redesignating the Note to paragraph b as Note to paragraph d), respectively, so that all criteria that identify “batch mixers” that are controlled under ECCN 1B117 are in the List of Items Controlled section. These changes involving the rearranging of the existing text are being made for clarity and consistency within the MTCR Annex (MTCR Annex Change, Category II: Item 4.B.3., Dublin 2017 Plenary). These changes are not expected to have any impact on the number of license applications received by BIS.

ECCN 1B118. This final rule amends ECCN 1B118 by revising the heading to remove the criteria for which “continuous mixers” are controlled under 1B118 and adds those criteria to the “items” paragraph in the List of Items Controlled section. This final rule revises “items” paragraphs a and b to include the control criteria that identify certain “continuous mixers” that are controlled under ECCN 1B118. This final rule, as a conforming change, also redesignates existing “items” paragraph b as paragraph c, which includes criteria that identify other “continuous mixers” that are controlled under ECCN 1B118. The changes to paragraph b, which this rule redesignates as “items” paragraph c.2, include making minor edits for clarity of the

control parameters to more clearly identify the shafts controlled (MTCR Annex Change, Category II: Item 4.B.3.a., Dublin 2017 Plenary). These changes involving the rearranging of the existing text are being made for clarity and consistency within the MTCR Annex. These changes are not expected to have any impact on the number of license applications received by BIS.

ECCN 1C111. This final rule amends ECCN 1C111 by revising “items” paragraph a.1 in the List of Items Controlled section. In “items” paragraph a.1, this final rule removes the word “percent” and adds in its place the “%” sign in the phrase “if at least 10 percent of the total weight.” This change is being made for consistency with the MTCR Annex (Changes to Align with MTCR Annex). This is a clarification and will not change any scope of control. This change is not expected to have any impact on the number of license applications received by BIS.

ECCN 1C118. This final rule amends ECCN 1C118 by revising “items” paragraphs a.1, a.2, and a.3 in the List of Items Controlled section. In “items” paragraphs a.1 and a.2, this final rule removes the phrase “weight percent” and adds in its place the phrase “% by weight.” In “items” paragraph a.3, this final rule removes the phrase “percent is austenite” and adds in its place the “%” sign and for clarity moves the phrase “is austenite” to the end of the paragraph. These changes involving the rearranging of the existing text are being made for clarity and consistency with the MTCR Annex (MTCR Annex Change, Category II: Item 6.C.9., Dublin 2017 Plenary). This is a clarification and will not change any scope of control. These changes are not expected to have any impact on the number of license applications received by BIS.

ECCN 2B109. This final rule amends ECCN 2B109 by revising the heading, revising “items” paragraphs a and b in the List of Items Controlled section, and removing Technical Note 2 in the List of Items Controlled section. This final rule revises the introductory text of “items” paragraph a to incorporate the text from Technical Note 2 into the paragraph, creating positive and specific control text to identify the types of “flow-forming machines” that are controlled under ECCN 2B109. Only “flow-forming machines” that are usable in the “production” of propulsion components and equipment (*e.g.*, motor cases and interstages) for “missiles” will be controlled under ECCN 2B109. This rule includes a parenthetical phrase to provide two examples of the types of propulsion components and equipment being referenced in ECCN 2B109.a. This final rule also revises “items” paragraphs a.1 and a.2 to make minor clarifications in the control parameters. This final rule revises “items” paragraph a.1 to add the phrase “equipped with or” according to the manufacturer’s technical specification, and removes the phrase “can be” and adds in its places the phrase “capable of being” equipped. This final rule removes the word “have” from the beginning of “items” paragraph a.2 because the introductory text of paragraph a already includes this word, so it is redundant in a.2. The final rule removes Technical Note 2 because the substance of this technical note is added to “items” paragraph a, which means the technical note is no longer needed. This final rule rewords the substance of Technical Note 2 added to the introductory text of “items” paragraph a for clarity and to remove the double negative (MTCR Annex Change, Category II: Item 3.B.3., Dublin 2017 Plenary).

In ECCN 2B109, this final rule revises the heading by removing the phrase “and “specially designed” “parts” and “components” therefor.” As a conforming change this final rule revises “items” paragraph b to add “parts” to the scope of this paragraph. These changes to the

heading and “items” paragraph b do not change the scope of the ECCN, but rather clarify the intended scope of ECCN 2B109. This final rule corrects “items” paragraph b, so that an MT control on “parts” and “components” applies only to 2B009 machines that are controlled for MT reasons. The control text in the heading referring to “parts” and “components” is not needed, provided conforming edits were made to add “parts” to the scope of “items” paragraph b, which controlled “components” prior to publication of this final rule. This final rule also revises the heading to add the phrase “as follows (see List of Items Controlled)” to reflect that this ECCN includes an “items” paragraph (Changes to Align with MTCR Annex). These changes are not expected to have any impact on the number of license applications received by BIS.

ECCN 2B120. This final rule amends the heading of ECCN 2B120 by revising “items” paragraph a in the List of Items Controlled section to move the phrase “or more” to precede the term “axes.” The phrase “two or more axes” is clearer and more consistent within the MTCR Annex. The motion simulators and rate tables controlled under “items” paragraph a are those with two or more axes (MTCR Annex Change, Category I: Item 9.B.2.c, Dublin 2017 Plenary). These changes are not expected to have any impact on the number of license applications received by BIS.

ECCN 2B121. Similar to the change described above to ECCN 2B120, this final rule amends ECCN 2B121 by revising “items” paragraph a in the List of Items Controlled section to move the phrase “or more” to precede the term “axes.” The phrase “two or more axes” is clearer and more consistent within the MTCR Annex. The positioning tables controlled under “items” paragraph a are those with two or more axes (MTCR Annex Change, Category II: Item 9.B.2.d.,

Dublin 2017 Plenary). These changes are not expected to have any impact on the number of license applications received by BIS.

ECCN 2B122. This final rule amends ECCN 2B122 by revising the heading to remove the word “above” and add in its place the phrase “greater than” to clarify that centrifuges capable of imparting accelerations “greater than” 100 g are those that meet this portion of the control parameter. The word “above” also conveys the same meaning, but the phrase “greater than” is clearer and more consistent within the MTCR Annex (MTCR Annex Change, Category II: Item 9.B.2.e., Dublin 2017 Plenary). These changes are not expected to have any impact on the number of license applications received by BIS.

ECCN 6A107. This final rule amends ECCN 6A107 by adding a definition of ‘Time to steady-state registration’ to the Related Definitions paragraph in the List of Items Controlled section. As a conforming change, this final rule also revises the “items” paragraph a.2 in the List of Items Controlled section of ECCN 6A107 to add single quotation marks around the term ‘time to steady-state registration’ to indicate the term is defined for purposes of this ECCN under the Related Definitions paragraph (MTCR Annex Change, Category II: Item 12.A.3.a.2. Technical Note, Stockholm 2017 TEM). These changes are not expected to have any impact on the number of license applications received by BIS.

ECCN 7A105. This final rule amends ECCN 7A105 by revising the heading and the Related Definitions paragraph. This final rule revises the heading of ECCN 7A105 to remove the phrase “Global Navigation Satellite Systems (GNSS),” including the parenthetical phrase

with examples of GNSS, and adds in its place the term ‘navigation satellite systems.’ This final rule amends ECCN 7A105 by adding a definition of ‘Navigation satellite systems’ to the Related Definitions paragraph in the List of Items Controlled section to define this term for purposes of this ECCN. The new definition of ‘navigation satellite systems’ specifies that these systems include global navigation satellite systems (GNSS) and regional navigation satellite systems (RNSS) and provides an illustrative list of such (GNSS, RNSS) systems (MTCR Annex Change, Category II: Item 11.A.3., Stockholm 2017 TEM and Dublin 2017 Plenary). These changes to ECCN 7A105 are being made in this final rule because the MTCR Annex entry that addresses receiving equipment for navigation satellite systems has been expanded to include regional navigation satellite systems, as well as listing the Chinese system “BeiDou” in the examples of GNSS. To accomplish this, as described above, this final rule in ECCN 7A105 adds a local definition of ‘navigation satellite systems,’ with expanded examples, to the Related Definitions paragraph in the List of Items Controlled. ECCN 7A105 does not encompass all of the commodities specified under the MTCR Annex, Category II, Item 11.A.3 entry, because some of those commodities are “subject to the ITAR.” The existing Related Controls paragraph (2) in ECCN 7A105, as well as the Commerce Control List Order of Review in Supplement No. 4 to part 774 of the EAR already provides guidance on this, so no additional changes are needed in this rule to address that issue. This change is expected to result in an increase of one or fewer applications received annually by BIS, because of the generally low number of such items exported.

ECCN 7A107. This final rule amends ECCN 7A107 by revising “items” paragraph b in the List of Items Controlled section by removing the phrase “capable of providing” at the

beginning of the paragraph. The phrase is not needed in order to convey the meaning of the control parameter and removing the phrase makes the control parameter text more precise. This change is made to conform to this MTCR Annex change. ECCN 7A107.a already reflects changes made in the MTCR Annex, and therefore, that “items” paragraph a did not need to be amended in this final rule (MTCR Annex Change, Category II: Item 9.A.8., Dublin 2017 Plenary). This is a clarification and will not change any scope of control. This change is not expected to have any impact on the number of license applications received by BIS.

ECCN 7A116. This final rule amends ECCN 7A116 by revising the heading; and adding a License Requirements section, License Exceptions section and List of Items Controlled section (MTCR Annex Change, Category II: Item 10.A., Notes, Dublin 2017 Plenary; and Changes to Align with MTCR Annex). This final rule, in order to fully reflect the commodities specified in the MTCR Annex, Category II: Item 10.A., revises ECCN 7A116 to control items that are not “subject to the ITAR,” but that would otherwise meet the description of items in the MTCR Annex, Category II: Item 10.A and the new control parameters this final rule adds to ECCN 7A116.

This final rule does this by revising the heading, which includes removing the parenthetical phrase that stated that all items in the heading were “subject to the ITAR.” As a conforming change, this final rule adds a Related Controls paragraph (2) to alert people to see United States Munitions List (USML) Category IV for items “specially designed” for use in rockets or missiles that are “subject to the ITAR.” This final rule also adds a Related Controls paragraph (1) to direct people to also see ECCNs 9A610.r and .s for items designated or

modified for military UAVs. This final rule adds a license requirement for MT 1 and AT 1 for these commodities that this rule controls under ECCN 7A116.

This final rule adds “items” paragraphs a, b, and c to specify the commodities controlled under ECCN 7A116. This final rule, as described below in the changes this final rule makes to ECCN 9A012, removes the control parameters in “items” paragraph 9A012.b.5 and adds (moves) those to ECCN 7A116. These changes are appropriate because there are no similar controls in the Wassenaar Arrangement for these commodities that are specified on the MTCR Annex, and under the Commerce Control List Order of Review these items will be appropriately controlled under ECCN 7A116. The commodities this rule moves from 9A012.b.5 will no longer be controlled for national security (NS) reasons, but the commodities will be MT controlled. This final rule also adds a note at the end of the “items” paragraph in the List of Items Controlled section of ECCN 7A116 to specify that systems, equipment and valves designed or modified to enable operation of manned aircraft as unmanned aerial vehicles are included within the scope of this ECCN.

These changes are not expected to have any impact on the number of license applications received by BIS, because this equipment is not widely used or exported.

ECCN 9A012. This final rule amends ECCN 9A012 by revising the “MT” paragraph in the table in the License Requirements section and removing the “items” paragraph b.5 in the List of Items Controlled section. This final rule revises the MT controls paragraph to remove the term “Air” and add in its place “Aerial” in the term “Unmanned Aerial Vehicles (UAVs).” This change is made to conform to the MTCR Annex and other references in the EAR to UAVs. As a conforming change for the movement of commodities classified in 9A012.b.5, as described

above for the changes this final rule makes to ECCN 7A116, this final rule revises the MT controls paragraph in ECCN 9A012 to remove the reference to “9A012.b” and add a reference in its place to ECCN 9A120. This final rule also revises the reasons for control in ECCN 9A012 to close a potential gap in the MT controls. If a UAV meets the requirements of ECCN 9A120, it would be controlled for MT reasons. However, as the text was written prior to publication of this final rule, if such a UAV met the requirements of 9A012.a, but did not have the range of 300 km, it would be controlled by 9A012.a and the MT control would no longer apply.

For the reasons discussed above regarding the changes to ECCN 7A116, this final rule makes a conforming change to remove “items” paragraph b.5 from the List of Items Controlled because these commodities will be controlled under ECCN 7A116 (MTCR Annex Change, Category II: Item 10.A., Notes, Dublin 2017 Plenary). These changes are expected to result in an increase of 1 or fewer applications received annually by BIS, because these are clarifying changes and reflects the current interpretation for where these commodities should be controlled under the EAR.

ECCN 9A101. This final rule amends ECCN 9A101 by revising the Related Definitions paragraph, revising “items” paragraph a, adding new “items” paragraphs a.3 and a.4, and revising “items” paragraph b in the List of Items Controlled section. These changes are being made to this entry to limit the control to those engines that are most likely to be used on MTCR controlled cruise missiles and unmanned aerial vehicles, and to remove controls from larger engines that are unlikely to be used on such systems. While larger civil certified engines were already excluded from control under ECCN 9A101, they were still controlled under ECCN

9A101 prior to completing the civil certification process (MTCR Annex Change, Category II: Item 3.A.1.a., Stockholm 2017 TEM).

This final rule revises the Related Definitions paragraph by removing the definition of ‘maximum thrust value’ and adding this definition as part of three new Technical Notes this final rule adds to “items” paragraph a in the List of Items Controlled section of ECCN 9A101. This final rule adds the definition of ‘maximum thrust value’ as Technical Note 1 and adds the phrase “at sea level static conditions using ICAO standard atmosphere” to the technical note to add greater specificity on the conditions under which the measurement needs to be taken for purposes of ECCN 9A101. This final rule also adds two new technical notes to “items” paragraph a; one for ‘dry weight’ (Technical Note 2) and a second for ‘first-stage rotor diameter’ (Technical Note 3). The definition of ‘dry weight’ in Technical Note 2 provides the criteria for what needs to be included in the measurement and specifies that the measurement should not include the nacelle (housing). The definition of ‘first-stage rotor diameter’ in Technical Note 3, will provide guidance on how to measure the diameter of the first rotating stage of the engine.

The final rule revises the introductory text of “items” paragraph a to remove the word “both” and add in its place the word “all.” This is a conforming change because this rule adds new “items” paragraphs a.3 and a.4, and in order to be controlled under ECCN 9A101.a, the engine needs to meet all of the criteria in paragraphs a.1 to a.4. This final rule adds new “items” paragraphs a.3 and a.4, to include the criterion of ‘dry weight’ less than 750 kg as part of the criteria that need to be met for an engine to be controlled under ECCN 9A101.a. This final rule also adds a new “items” paragraph a.4 to include the criterion of the “‘first-stage rotor diameter’ less than 1 m” as part of the criteria that need to be met for an engine to be controlled under ECCN 9A101.a. This final rule also revises “items” paragraph b, which functions as a catch-all

for purposes of this ECCN for engines designed or modified for use in “missiles” or UAVs with a range equal to or greater than 300 km, to specify paragraph b is not limited by the ‘dry weight’ or the ‘first-stage rotor diameter’ of the engine. This final rule also revises paragraph b to add the phrase “or UAVs with a range equal to or greater than 300 km” after the term “missiles.” The change to add the phrase “UAVs with a range equal to or greater than 300 km” is being made for consistency with the MTCR Annex (Changes to Align with MTCR Annex).

These changes are expected to result in a decrease of no more than 1 to 3 applications received annually by BIS.

ECCN 9A115. This final rule amends ECCN 9A115 by revising the heading; and adding a License Requirements section, License Exceptions section and List of Items Controlled section (Changes to Align with MTCR Annex). This final rule also revises the heading of ECCN 9A115 by removing the parenthetical phrase at the end of the heading that references items controlled in ECCN 9A610 and others that are “subject to the ITAR.” The parenthetical phrase was added to ECCN 9A115 in a November 21, 2016 final rule (81 FR 83124). This final rule retains this cross reference between the USML and the CCL, but moves the substance of this text from the heading of ECCN 9A115 to the new Related Controls paragraph added by this rule to the License Requirements section of 9A115. The other changes this final rule makes to ECCN 9A115 are needed because some of the commodities described in the heading of ECCN 9A115 are neither “subject to the ITAR” nor controlled in ECCN 9A610.u, but would otherwise meet the control parameters in the heading of ECCN 9A115. Consistent with the CCL Order of Review (*See* Supplement 4 to part 774), and to align with the MTCR Annex, this rule makes it clear that such commodities are controlled under 9A115. These changes are expected to result in

an increase of 1 or fewer applications received annually by BIS, due to the low volume of such items exported.

ECCN 9A515. This final rule amends ECCN 9A515 by adding a new “items” paragraph h to control spacecraft thrusters for MT reasons. This final rule also revises the “MT” paragraph in the table in the License Requirements section to specify that the MT control applies to spacecraft thrusters controlled in 9A515.h when the total impulse capacity is equal to or greater than 8.41×10^5 . These changes are needed to clarify which of the satellite thrusters are subject to the EAR. On January 10, 2017, Commerce published a final rule (82 FR 2875) that moved these thrusters from the USML to the CCL, and the Department of State published a corresponding rule (82 FR 2889) removing the thrusters from the ITAR. As a consequence of those rules, the public sought clarification from BIS on what items were actually “subject to the EAR.”

Consistent with the Commerce January 10, 2017 final rule, the Department of State has informed Commerce that it intends to clarify that the existing USML IV(d) paragraph does not control spacecraft thrusters, and that such thrusters are “subject to the EAR.” Commerce agrees with the Department of State that adding a note to the USML clarifying these controls will assist exporters in better determining the control jurisdiction of the spacecraft thrusters that were moved from the USML to the CCL in the January 10, 2017 final rule.

The questions raised by the public and discussions between the Department of Commerce and State, including the discussions regarding the spacecraft thruster controls, identified a need to add an MT control to the spacecraft thrusters to align with the MTCR Annex. Following the

USML Order of Review and CCL Order of Review, these spacecraft thrusters were, prior to publication of this final rule, controlled under “items” paragraph x of ECCN 9A515. Because “items” paragraph x is not MT controlled, this final rule adds a separate “items” paragraph h to ECCN 9A515 to allow for the imposition of an MT control on these spacecraft thrusters to align with the MTCR Annex (Changes to Align with MTCR Annex). Finally, as a conforming change consistent with the addition of “items” paragraph h, this final rule reserves “items” paragraphs i through w. These changes are expected to result in an annual increase of twelve license applications received by BIS.

ECCN 9A610. This final rule amends ECCN 9A610 by making revisions to the “items” paragraph (MTCR Annex Change, Category II: Item 10.A., Notes, Dublin 2017 Plenary). This final rule redesignates “items” paragraph w as “items” paragraph w.1 and creates new “items” paragraph w.2 in ECCN 9A610, including redesignating Note to paragraph w, as Note to paragraph w.1. In addition to this redesignation, this final rule removes the term “drones” from “items” paragraph w.1 and the Note to paragraph w.1 because the MTCR Annex does not use the term “drones,” other than stating that drones are a type of UAV, and therefore the term does not need to be included in “items” paragraph w.1 or in the Note. This final rule for the same reason also removes the term “drones” from “items” paragraphs u and v, including in the Note to paragraph u and Note to paragraph v (Changes to Align with MTCR Annex). This final rule also adds a new “items” paragraph w.2, to control for MT reasons, flight control servo valves designed or modified for the systems in 9A610.w.1, and the additional criteria this final rule includes in new “items” paragraph w.2. This final rule makes these changes in ECCN 9A610 in

order to accommodate the new “items” paragraph w.2, which corresponds to MTCR Annex, Category II, Item 10.A.3, but had not previously been listed on the CCL.

This final rule also adds a Note to paragraphs w.1 and w.2 to specify that these two “items” paragraphs include systems, equipment and valves designed or modified to enable operation of manned aircraft as unmanned aerial vehicles. The addition of the note will clarify that the controls include equipment when used for the conversion of a manned aircraft to operate as a UAV. Some of this type of equipment is “subject to the ITAR,” and some of this type of equipment is “subject to the EAR.” Prior to publication of this final rule, the type of equipment referenced in ECCN 7A116 made it appear that all of this type of equipment was “subject to the ITAR,” which is correct for certain equipment, but not for all such equipment. For example, some of this equipment prior to publication of this final rule was controlled in ECCN 9A610.w. The changes described above that this final rule makes to ECCNs 7A116 and 9A610, will make needed corrections to clarify where this type of equipment is controlled on the CCL.

Prior to publication of this rule, some of the equipment specified in MTCR Annex, Category II, Item 10.A.3. was not controlled on the CCL. While ECCN 9A106 has an entry for the equipment used in liquid propulsion systems for rockets, there was not a corresponding entry listing the equipment used in UAVs. To correct this gap in coverage, this final rule adds the criteria in MTCR Annex, Category II, 10.A.3. to ECCNs 7A116 and 9A610, as described above.

These changes are not expected to have any impact on the number of license applications received by BIS due to the low volume of such items exported.

Savings Clause

Shipments of items removed from eligibility for a License Exception or export or reexport without a license (NLR) as a result of this regulatory action that were on dock for loading, on lighter, laden aboard an exporting or reexporting carrier, or enroute aboard a carrier to a port of export or reexport, on [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER], pursuant to actual orders for export or reexport to a foreign destination, may proceed to that destination under the previous eligibility for a License Exception or export or reexport without a license (NLR) so long as they are exported or reexported before [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]. Any such items not actually exported or reexported before midnight, on [INSERT DATE 30 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER], require a license in accordance with this rule.

Export Control Reform Act of 2018

On August 13, 2018, the President signed into law the John S. McCain National Defense Authorization Act for Fiscal Year 2019, which included the Export Control Reform Act of 2018 (ECRA) (Title XVII, Subtitle B of Pub. L. 115-232) that provides the legal basis for BIS's principal authorities and serves as the authority under which BIS issues this rule. As set forth in Section 1768 of ECRA, all delegations, rules, regulations, orders, determinations, licenses, or other forms of administrative action that have been made, issued, conducted, or allowed to become effective under the Export Administration Act of 1979 (50 U.S.C. 4601 et seq.) (as in effect prior to August 13, 2018 and as continued in effect pursuant to the International

Emergency Economic Powers Act (50 U.S.C. 1701 et seq.) and Executive Order 13222 of August 17, 2001, 3 CFR, 2001 Comp., p. 783 (2002), as amended by Executive Order 13637 of March 8, 2013, 78 FR 16129 (March 13, 2013), and as extended by the Notice of August 8, 2018, 83 FR 39871 (August 13, 2018)), or the Export Administration Regulations, and are in effect as of August 13, 2018, shall continue in effect according to their terms until modified, superseded, set aside, or revoked under the authority of ECRA.

Executive Order Requirements

Executive Orders 13563 and 12866 direct agencies to assess all costs and benefits of available regulatory alternatives and, if regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety effects, distribute impacts, and equity). Executive Order 13563 emphasizes the importance of quantifying both costs and benefits, of reducing costs, of harmonizing rules, and of promoting flexibility. This final rule has been designated a “significant regulatory action” under Executive Order 12866. The MTCR was formed in 1987 by the U.S. and G-7 countries (Canada, France, Germany, Italy, Japan, and the UK) to address the increasing proliferation of nuclear weapons by addressing the most destabilizing delivery system for such weapons. The MTCR seeks to limit the risk of proliferation of weapons of mass destruction by controlling exports of goods and technologies that could make a contribution to delivery systems (other than manned aircraft) for such weapons. The proliferation of such weapons has been identified as a threat to domestic and international peace and security. Commerce estimates this rule will not change the number of license requests received by BIS annually.

This rule does not contain policies with Federalism implications as that term is defined under E.O. 13132.

For the purposes of E.O. 13771, this rule is issued with respect to a national security function of the United States. The cost-benefit analysis indicates the rule is intended to improve national security as its primary direct benefit, and the regulation qualifies for a good cause exception under 5 U.S.C. 553(b)(B). Accordingly, this rule meets the requirements set forth in the April 5, 2017, OMB guidance implementing E.O. 13771, and is, therefore, exempt from the requirements of E.O. 13771.

Paperwork Reduction Act Requirements

Notwithstanding any other provision of law, no person may be required to respond to or be subject to a penalty for failure to comply with a collection of information, subject to the requirements of the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.) (PRA), unless that collection of information displays a currently valid Office of Management and Budget (OMB) Control Number.

This regulation involves a collection currently approved by OMB under control number 0694–0088, Simplified Network Application Processing System. This collection includes, among other things, license applications, and carries a burden estimate of 43.8 minutes for a manual or electronic submission for a total burden estimate of 31,833 hours. BIS expects the burden hours associated with this collection to increase slightly by ten hours for an estimated cost increase of \$378. This increase is not expected to exceed the existing estimates currently associated with OMB control number 0694–0088. Although this final rule makes important

changes to the EAR for items controlled for missile technology reasons, Commerce believes the overall increase in costs and burdens due to this rule will be minimal.

Any comments regarding the collection of information associated with this rule, including suggestions for reducing the burden, may be sent to Jasmeet K. Seehra, Office of Management and Budget (OMB), by e-mail to Jasmeet_K._Seehra@omb.eop.gov, or by fax to (202) 395-7285.

Administrative Procedure Act and Regulatory Flexibility Act Requirements

The provisions of the Administrative Procedure Act (APA) (5 U.S.C. 553) requiring notice of proposed rulemaking, the opportunity for public participation, and a delay in effective date, are inapplicable because this action involves a military and foreign affairs function of the United States (5 U.S.C. 553(a)(1)). Immediate implementation of these amendments fulfills the United States' international commitments to the MTCR. The MTCR contributes to international peace and security by promoting greater responsibility in transfers of missile technology items that could make a contribution to delivery systems (other than manned aircraft) for weapons of mass destruction. The MTCR consists of 35 member countries acting on a consensus basis. The changes discussed in this rule implement agreements reached at the October 2017 Plenary in Dublin, Ireland, and the May 2017 Technical Experts Meeting in Stockholm, Sweden. Since the United States is a significant exporter of the items discussed in this rule, implementation of this provision is necessary for the MTCR to achieve its purpose.

Although the APA requirements in section 553 are not applicable to this action under the provisions of paragraph (a)(1), this action also falls within two other exceptions in the section.

The subsection (b) requirement that agencies publish a notice of proposed rulemaking that includes information on the public proceedings does not apply when an agency for good cause finds that the notice and public procedures are impracticable, unnecessary, or contrary to the public interest, and the agency incorporates the finding (and reasons therefor) in the rule that is issued (5 U.S.C. 553(b)(B)). In addition, the section 553(d) requirement that publication of a rule shall be made not less than 30 days before its effective date can be waived if an agency finds there is good cause to do so.

The section 553 requirements for notice and public procedures and for a delay in the date of effectiveness do not apply to this rule, as there is good cause to waive such practices. Delay in implementation would be contrary to the public interest because it would disrupt the movement of these potentially national and international security threatening items globally, creating disharmony between export control measures implemented by MTCR members. Export controls work best when all countries implement the same export controls in a timely manner. Delaying this rulemaking would prevent the United States from fulfilling its commitment to the MTCR in a timely manner, would injure the credibility of the United States in this and other multilateral regimes, and could impair the international community's ability to effectively control the export of certain potentially national and international security threatening items. Therefore, this regulation is issued in final form, and is effective [INSERT DATE OF PUBLICATION IN THE FEDERAL REGISTER].

Further, no other law requires that a notice of proposed rulemaking and an opportunity for public comment be given for this final rule. Because a notice of proposed rulemaking and an opportunity for public comment are not required to be given for this rule under the

Administrative Procedure Act or by any other law, the analytical requirements of the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) are not applicable. Accordingly, no regulatory flexibility analysis is required and none has been prepared.

List of Subjects in 15 CFR Part 774

Exports, Reporting and recordkeeping requirements.

Accordingly, part 774 of the Export Administration Regulations (15 CFR parts 730–774) is amended as follows:

PART 774—[AMENDED]

1. The authority citation for 15 CFR part 774 is revised to read as follows:

Authority: Pub. L. 115-232, Title XVII, Subtitle B. 50 U.S.C. 4601 *et seq.*; 50 U.S.C. 1701 *et seq.*; 10 U.S.C. 7420; 10 U.S.C. 7430(e); 22 U.S.C. 287c, 22 U.S.C. 3201 *et seq.*; 22 U.S.C. 6004; 42 U.S.C. 2139a; 15 U.S.C. 1824a; 50 U.S.C. 4305; 22 U.S.C. 7201 *et seq.*; 22 U.S.C. 7210; E.O. 13026, 61 FR 58767, 3 CFR, 1996 Comp., p. 228; E.O. 13222, 66 FR 44025, 3 CFR, 2001 Comp., p. 783; Notice of August 8, 2018, 83 FR 39871 (August 13, 2018).

2. In Supplement No. 1 to part 774, Category 1, revise Export Control Classification Number (ECCN) 1B117 to read as follows:

Supplement No. 1 to Part 774—The Commerce Control List

**1B117 Batch mixers having all of the following (see List of Items Controlled), and
“specially designed” “parts” and “components” therefor.**

License Requirements

Reason for Control: MT, AT

<i>Control(s)</i>	<i>Country Chart (See Supp. No. 1 to part 738)</i>
MT applies to entire entry	MT Column 1
AT applies to entire entry	AT Column 1

List Based License Exceptions (See Part 740 for a description of all license exceptions)

LVS: N/A

GBS: N/A

CIV: N/A

List of Items Controlled

Related Controls: See 1B115, 1B118, and 1B119.

Related Definitions: N/A

Items:

- a. Capable of mixing under vacuum in the range from zero to 13.326 kPa;
- b. Capable of controlling the temperature of the mixing chamber;
- c. A total volumetric capacity of 110 liters (30 gallons) or more; and
- d. At least one ‘mixing/kneading shaft’ mounted off center.

***Note to paragraph d:** In 1B117.d. the term ‘mixing/kneading shaft’ does not refer to deagglomerators or knife-spindles.*

3. In Supplement No. 1 to part 774, Category 1, revise ECCN 1B118 to read as follows:

1B118 Continuous mixers having all of the following (see List of Items Controlled), and “specially designed” “parts” and “components” therefor.

License Requirements

Reason for Control: MT, AT

<i>Control(s)</i>	<i>Country Chart (See Supp. No. 1 to part 738)</i>
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MT applies to entire entry	MT Column 1
AT applies to entire entry	AT Column 1

List Based License Exceptions (See Part 740 for a description of all license exceptions)

LVS: N/A

GBS: N/A

CIV: N/A

List of Items Controlled

Related Controls: See 1B115, 1B117, and 1B119.

Related Definitions: N/A

Items:

- a. Capable of mixing under vacuum in the range from zero to 13.326 kPa;
- b. Capable of controlling the temperature of the mixing chamber; and
- c. Either of the following:
 - c.1. Two or more mixing/kneading shafts; or
 - c.2. A single rotating and oscillating shaft with kneading teeth/pins as well as kneading teeth/pins inside the casing of the mixing chamber.

4. In Supplement No. 1 to part 774, Category 1, revise ECCN 1C111 to read as follows:

1C111 Propellants and constituent chemicals for propellants, other than those specified in 1C011, as follows (see List of Items Controlled).

License Requirements

Reason for Control: MT, NP, RS, AT

<i>Control(s)</i>	<i>Country Chart (See Supp. No. 1 to part 738)</i>
MT applies to entire entry	MT Column 1
NP applies to 1C111.a.3.f only	NP Column 1
RS applies to 1C111.d.3 only	RS Column 1
AT applies to entire entry	AT Column 1

List Based License Exceptions (See Part 740 for a description of all license exceptions)

LVS: N/A

GBS: N/A

CIV: N/A

List of Items Controlled

Related Controls: (1) See USML Category V(e)(7) for controls on HTPB (hydroxyl terminated polybutadiene) with a hydroxyl functionality equal to or greater than 2.2 and less than or equal to 2.4, a hydroxyl value of less than 0.77 meq/g, and a viscosity at 30 °C of less than 47 poise (CAS # 69102-90-5). (2) See USML Category V(f)(3) for controls on ferrocene derivatives, including butacene. (3) See ECCN 1C608 for controls on oxidizers that are composed of fluorine and also other halogens, oxygen, or nitrogen, except for chlorine trifluoride, which is controlled under this ECCN 1C111.a.3.f. (4) See ECCN 1C011.b for controls on boron and boron alloys not controlled under this ECCN 1C111.a.2.b. (5) See USML Category V(d)(10) for controls on Inhibited Red Fuming Nitric Acid (IRFNA) (CAS 8007-58-7).

Related Definitions: Particle size is the mean particle diameter on a weight or volume basis. Best industrial practices must be used in sampling, and in determining particle size, and the controls may not be undermined by the addition of larger or smaller sized material to shift the mean diameter.

Items:

a. Propulsive substances:

a.1. Spherical or spheroidal aluminum powder (C.A.S. 7429-90-5) in particle size of less than 200×10^{-6} m (200 μ m) and an aluminum content of 97% by weight or more, if at least 10 %

of the total weight is made up of particles of less than 63 μm , according to ISO 2591-1:1988 or national equivalents.

Technical Note: *A particle size of 63 μm (ISO R-565) corresponds to 250 mesh (Tyler) or 230 mesh (ASTM standard E-11).*

a.2. Metal powders and alloys where at least 90% of the total particles by particle volume or weight are made up of particles of less than 60 μ (determined by measurement techniques such as using a sieve, laser diffraction or optical scanning), whether spherical, atomized, spheroidal, flaked or ground, as follows:

a.2.a. Consisting of 97% by weight or more of any of the following:

a.2.a.1. Zirconium (C.A.S. # 7440-67-7);

a.2.a.2. Beryllium (C.A.S. # 7440-41-7); or

a.2.a.3. Magnesium (C.A.S. # 7439-95-4);.

a.2.b. Boron or boron alloys with a boron content of 85 % or more by weight.

Technical Note: *The natural content of hafnium in the zirconium (typically 2% to 7%) is counted with the zirconium.*

Note: *In a multimodal particle distribution (e.g., mixtures of different grain sizes) in which one or more modes are controlled, the entire powder mixture is controlled.*

a.3. Oxidizer substances usable in liquid propellant rocket engines, as follows:

a.3.a. Dinitrogen trioxide (CAS 10544-73-7);

a.3.b. Nitrogen dioxide (CAS 10102-44-0) / dinitrogen tetroxide (CAS 10544-72-6);

a.3.c. Dinitrogen pentoxide (CAS 10102-03-1);

a.3.d. Mixed oxides of nitrogen (MON);

a.3.e. [RESERVED];

a.3.f. Chlorine trifluoride (ClF₃).

Technical Note: *Mixed oxides of nitrogen (MON) are solutions of nitric oxide (NO) in dinitrogen tetroxide/nitrogen dioxide (N₂O₄/NO₂) that can be used in missile systems. There are a range of compositions that can be denoted as MON_i or MON_{ij}, where *i* and *j* are integers representing the percentage of nitric oxide in the mixture (e.g., MON₃ contains 3% nitric oxide, MON₂₅ 25% nitric oxide. An upper limit is MON₄₀, 40% by weight).*

b. Polymeric substances:

b.1. Carboxy-terminated polybutadiene (including carboxyl-terminated polybutadiene) (CTPB);

b.2. Hydroxy-terminated polybutadiene (including hydroxyl-terminated polybutadiene) (HTPB) (CAS 69102-90-5), except for hydroxyl-terminated polybutadiene as specified in USML Category V (see 22 CFR 121.1) (also see Related Controls Note #1 for this ECCN);

b.3. Polybutadiene acrylic acid (PBAA);

b.4. Polybutadiene acrylic acid acrylonitrile (PBAN) (CAS 25265-19-4 / CAS 68891-50-9);

b.5. Polytetrahydrofuran polyethylene glycol (TPEG).

Technical Note: Polytetrahydrofuran polyethylene glycol (TPEG) is a block copolymer of poly 1,4-Butanediol (CAS 110-63-4) and polyethylene glycol (PEG) (CAS 25322-68-3).

c. Other propellant energetic materials, additives, or agents:

c.1. [RESERVED]

c.2. Triethylene glycol dinitrate (TEGDN);

c.3. 2 Nitrodiphenylamine (2-NDPA);

c.4. Trimethylolethane trinitrate (TMETN);

c.5. Diethylene glycol dinitrate (DEGDN).

d. Hydrazine and derivatives as follows:

- d.1. Hydrazine (C.A.S. # 302–01–2) in concentrations of 70% or more;
- d.2. Monomethyl hydrazine (MMH) (C.A.S. # 60–34–4);
- d.3. Symmetrical dimethyl hydrazine (SDMH) (C.A.S. # 540–73–8);
- d.4. Unsymmetrical dimethyl hydrazine (UDMH) (C.A.S. # 57–14–7);
- d.5. Trimethylhydrazine (C.A.S. # 1741-01-1);
- d.6. Tetramethylhydrazine (C.A.S. # 6415-12-9);
- d.7. N,N diallylhydrazine (CAS 5164-11-4);
- d.8. Allylhydrazine (C.A.S. # 7422-78-8);
- d.9. Ethylene dihydrazine (CAS 6068-98-0);
- d.10. Monomethylhydrazine dinitrate;
- d.11. Unsymmetrical dimethylhydrazine nitrate;
- d.12. 1,1-Dimethylhydrazinium azide (CAS 227955-52-4) / 1,2-Dimethylhydrazinium azide (CAS 299177-50-7);
- d.13. Hydrazinium azide (C.A.S. # 14546-44-2);
- d.14. Hydrazinium dinitrate (CAS 13464-98-7);
- d.15. Diimido oxalic acid dihydrazine (C.A.S. # 3457-37-2);
- d.16. 2-hydroxyethylhydrazine nitrate (HEHN);

d.17. Hydrazinium diperchlorate (C.A.S. # 13812-39-0);

d.18. Methylhydrazine nitrate (MHN) (CAS 29674-96-2);

d.19. 1,1-Diethylhydrazine nitrate (DEHN) / 1,2-Diethylhydrazine nitrate (DEHN) (CAS 363453-17-2);

d.20. 3,6-dihydrazino tetrazine nitrate (DHTN), also referred to as 1,4-dihydrazine nitrate.

5. In Supplement No. 1 to part 774, Category 1, revise ECCN 1C118 to read as follows:

1C118 Titanium-stabilized duplex stainless steel (Ti-DSS), having all of the following characteristics (see List of Items Controlled).

License Requirements

Reason for Control: MT, AT

<i>Control(s)</i>	<i>Country Chart (See Supp. No. 1 to part 738)</i>
MT applies to entire entry	MT Column 1
AT applies to entire entry	AT Column 1

List Based License Exceptions (See Part 740 for a description of all license exceptions)

LVS: N/A

GBS: N/A

CIV: N/A

List of Items Controlled

Related Controls: N/A

Related Definitions: N/A

Items:

a. Having all of the following characteristics:

a.1. Containing 17.0-23.0% by weight of chromium and 4.5-7.0% by weight of nickel;

a.2. Having a titanium content of greater than 0.10% by weight; and

a.3. A ferritic-austenitic microstructure (also referred to as a two-phase microstructure) of which at least 10% by volume (according to ASTM E-1181-87 or national equivalents) is austenite; and

b. Having any of the following forms:

b.1. Ingots or bars having a size of 100 mm or more in each dimension;

b.2. Sheets having a width of 600 mm or more and a thickness of 3 mm or less; or

b.3. Tubes having an outer diameter of 600 mm or more and a wall thickness of 3 mm or less.

6. In Supplement No. 1 to part 774, Category 2, revise ECCN 2B109 to read as follows:

2B109 Flow-forming machines, other than those controlled by 2B009, as follows (see List of Items Controlled).

License Requirements

Reason for Control: MT, NP, AT

<i>Control(s)</i>	<i>Country Chart (See Supp. No. 1 to part 738)</i>
MT applies to entire entry	MT Column 1
NP applies to items controlled by this entry that meet or exceed the technical parameters in 2B209	NP Column 1
AT applies to entire entry	AT Column 1

List Based License Exceptions (See Part 740 for a description of all license exceptions)

LVS: N/A

GBS: N/A

CIV: N/A

List of Items Controlled

Related Controls: (1) See ECCN 2D101 for “software” for items controlled under this entry. (2) See ECCNs 2E001 (“development”), 2E002 (“production”), and 2E101 (“use”) for technology for items controlled under this entry. (3) Also see ECCNs 2B009 and 2B209.

Related Definitions: N/A

Items:

a. Flow-forming machines, usable in the “production” of propulsion components and equipment (e.g., motor cases and interstages) for “missiles”, having all of the following:

a.1. Equipped with, or according to the manufacturer's technical specification are capable of being equipped with, “numerical control” units or a computer control, even when not equipped with such units at delivery; and

a.2. More than two axes which can be coordinated simultaneously for “contouring control.”

b. “Specially designed” “parts” and “components” for flow-forming machines controlled in 2B009 for MT reasons or 2B109.a.

Technical Note:1. *Machines combining the function of spin-forming and flow-forming are for the purpose of 2B109 regarded as flow-forming machines.*

7. In Supplement No. 1 to part 774, Category 2, revise ECCN 2B120 to read as follows:

2B120 Motion simulators or rate tables (equipment capable of simulating motion), having all of the following characteristics (see List of Items Controlled).

License Requirements:

Reason for Control: MT, AT

<i>Control(s)</i>	<i>Country Chart (See Supp. No. 1 to part 738)</i>
MT applies to entire entry	MT Column 1
AT applies to entire entry	AT Column 1

List Based License Exceptions (See Part 740 for a description of all license exceptions)

LVS: N/A

GBS: N/A

CIV: N/A

List of Items Controlled:

Related Controls: (1) Rate tables not controlled by 2B120 and providing the characteristics of a positioning table are to be evaluated according to 2B121. (2) Equipment that has the characteristics specified in 2B121, which also meets the characteristics of 2B120 will be treated as equipment specified in 2B120. (3) See also 2B008, 2B121, 7B101 and 7B994.

Related Definitions: N/A

Items:

- a. Two or more axes;
- b. Designed or modified to incorporate sliprings or integrated non-contact devices capable of transferring electrical power, signal information, or both; and
- c. Having any of the following characteristics:
 - c.1. For any single axis having all of the following:
 - c.1.a. Capable of rates of rotation of 400 degrees/s or more, or 30 degrees/s or less, and
 - c.1.b. A rate resolution equal to or less than 6 degrees/s and an accuracy equal to or less than 0.6 degrees/s; or
 - c.2. Having a worst-case rate stability equal to or better (less) than plus or minus 0.05% averaged over 10 degrees or more; or
 - c.3. A positioning “accuracy” equal to or better than 5 arc-second.

Note: 2B120 does not control rotary tables designed or modified for machine tools or for medical equipment. For controls on machine tool rotary tables see 2B008.

8. In Supplement No. 1 to part 774, Category 2, revise ECCN 2B121 to read as follows:

2B121 Positioning tables (equipment capable of precise rotary position in any axis), other than those controlled in 2B120, having all the following characteristics (See List of Items Controlled).

License Requirements:

Reason for Control: MT, AT

<i>Control(s)</i>	<i>Country Chart (See Supp. No. 1 to part 738)</i>
MT applies to entire entry	MT Column 1
AT applies to entire entry	AT Column 1

List Based License Exceptions (See Part 740 for a description of all license exceptions)

LVS: N/A

GBS: N/A

CIV: N/A

List of Items Controlled:

Related Controls: (1) Equipment that has the characteristics specified in 2B121, which also meets the characteristics of 2B120 will be treated as equipment specified in 2B120.

(2) See also 2B008, 2B120, 7B101, and 7B994.

Related Definitions: N/A

Items:

- a. Two or more axes; and
- b. A positioning “accuracy” equal to or better than 5 arc-second.

Note: 2B121 does not control rotary tables designed or modified for machine tools or for medical equipment. For controls on machine tool rotary tables see 2B008.

- 9. In Supplement No. 1 to part 774, Category 2, revise ECCN 2B122 to read as follows:

2B122 Centrifuges capable of imparting accelerations greater than 100 g and designed or modified to incorporate sliprings or integrated non-contact devices capable of transferring electrical power, signal information, or both.

License Requirements:

Reason for Control: MT, AT

<i>Control(s)</i>	<i>Country Chart (See Supp. No. 1 to part 738)</i>
MT applies to entire entry	MT Column 1
AT applies to entire entry	AT Column 1

List Based License Exceptions (See Part 740 for a description of all license exceptions)

LVS: N/A

GBS: N/A

CIV: N/A

List of Items Controlled

Related Controls: See also 7B101.

Related Definitions: N/A

Items:

The list of items controlled is contained in the ECCN heading.

10. In Supplement No. 1 to part 774, Category 6, revise ECCN 6A107 to read as follows:

6A107 Gravity meters (gravimeters) or gravity gradiometers, other than those controlled by 6A007, designed or modified for airborne or marine use, as follows, (see List of Items Controlled) and “specially designed” “parts” and “components” therefor.

License Requirements

Reason for Control: MT, AT

<i>Control(s)</i>	<i>Country Chart (See Supp. No. 1 to part 738)</i>
MT applies to entire entry	MT Column 1
AT applies to entire entry	AT Column 1

List Based License Exceptions (See Part 740 for a description of all license exceptions)

LVS: N/A

GBS: N/A

CIV: N/A

List of Items Controlled

Related Controls: See USML Category XII(d) for certain gravity meters (gravimeters) or gravity gradiometers subject to the ITAR. See also ECCN 7A611.

Related Definitions: ‘Time to steady-state registration’ (also referred to as the gravity meter’s response time) is the time over which the disturbing effects of platform-induced acceleration (high frequency noise) are reduced.

Items:

a. Gravity meters having all the following:

a.1. A static or operational accuracy equal to or less (better) than 0.7 milligal (mgal); and

a.2. A ‘time to steady-state registration’ of two minutes or less.

b. Gravity gradiometers.

11. In Supplement No. 1 to part 774, Category 7, revise ECCN 7A105 to read as follows:

7A105 Receiving equipment for ‘navigation satellite systems’ designed or modified for airborne applications and capable of providing navigation information at speeds in excess of 600 m/s (1,165 nautical mph), and “specially designed” “parts” and “components” therefor.

License Requirements

Reason for Control: MT, AT

<i>Control(s)</i>	<i>Country Chart (See Supp. No. 1 to part 738)</i>
MT applies to entire entry	MT Column 1
AT applies to entire entry	AT Column 1

List Based License Exceptions (See Part 740 for a description of all license exceptions)

LVS: N/A

GBS: N/A

CIV: N/A

List of Items Controlled

Related Controls: (1) See also 7A005 and 7A994. (2) See Categories XI and XV of the U.S. Munitions List (22 CFR 121.1) for controls on similar equipment “specially designed” for defense articles.

Related Definitions: ‘Navigation satellite systems’ include Global Navigation Satellite Systems (GNSS; e.g. GPS, GLONASS, Galileo or BeiDou) and Regional Navigation Satellite Systems (RNSS; e.g. NavIC, QZSS).

Items:

The list of items controlled is contained in the ECCN heading.

12. In Supplement No. 1 to part 774, Category 7, revise ECCN 7A107 to read as follows:

7A107 Three axis magnetic heading sensors having all of the following characteristics (see List of Items Controlled), and “specially designed” “parts” and “components” therefor.

License Requirements

Reason for Control: MT, AT

<i>Control(s)</i>	<i>Country Chart (See Supp. No. 1 to part 738)</i>
MT applies to entire entry	MT Column 1
AT applies to entire entry	AT Column 1

List Based License Exceptions (See Part 740 for a description of all license exceptions)

LVS: N/A

GBS: N/A

CIV: N/A

List of Items Controlled

Related Controls: N/A

Related Definitions: N/A

Items:

- a. Internal tilt compensation in pitch (+/-90 degrees) and roll (+/-180 degrees) axes;
- b. Azimuthal accuracy better (less) than 0.5 degrees rms at latitudes of +/- 80 degrees, referenced to local magnetic field; and
- c. Designed or modified to be integrated with flight control and navigation systems.

***Note:** Flight control and navigation systems in 7A107 include gyrostabilizers, automatic pilots and inertial navigation systems.*

13. In Supplement No. 1 to part 774, Category 7, revise ECCN 7A116 to read as follows:

7A116 Flight control systems and “parts” and “components”, as follows (see List of Items Controlled).

License Requirements

Reason for Control: MT, AT

<i>Control(s)</i>	<i>Country Chart (See Supp. No. 1 to part 738)</i>
MT applies to entire entry	MT Column 1
AT applies to entire entry	AT Column 1

List Based License Exceptions (See Part 740 for a description of all license exceptions)

LVS: N/A

GBS: N/A

CIV: N/A

List of Items Controlled

Related Controls: (1) See 9A610.r. and 9A610.s. for items designed or modified for military UAVs. (2) See USML Category IV for items “specially designed” for use in rockets or missiles that are “subject to the ITAR.”

Related Definitions: N/A

Items:

a. Pneumatic, hydraulic, mechanical, electro-optical, or electromechanical flight control systems (including fly-by-wire and fly-by-light systems) designed or modified for UAVs capable of delivering at least 500 kilograms of payload to a range of at least 300 km, other than those controlled by either USML paragraph VIII(a) or ECCN 9A610.a;

b. Attitude control equipment designed or modified for UAVs capable of delivering at least 500 kilograms of payload to a range of at least 300 km, other than those controlled by either USML paragraph VIII(a) or ECCN 9A610.a;

c. Flight control servo valves designed or modified for the systems in 7A116.a. or 7A116.b, and designed or modified to operate in a vibration environment greater than 10 g rms over the entire range between 20Hz and 2 kHz.

***Note:** This entry includes the systems, equipment and valves designed or modified to enable operation of manned aircraft as unmanned aerial vehicles.*

14. In Supplement No. 1 to part 774, Category 9, revise ECCN 9A012 to read as follows:

9A012 Non-military “Unmanned Aerial Vehicles,” (“UAVs”), unmanned “airships”, related equipment and “components”, as follows (see List of Items Controlled).

License Requirements

Reason for Control: NS, MT, AT

<i>Control(s)</i>	<i>Country Chart (See Supp. No. 1 to part 738)</i>
NS applies to entire entry	NS Column 1

MT applies to non-military Unmanned Aerial Vehicles (UAVs) and Remotely Piloted Vehicles (RPVs) that are capable of a maximum range of at least 300 kilometers (km), regardless of payload, and UAVs that meet the requirements of 9A120	MT Column 1
AT applies to entire entry	AT Column 1

List Based License Exceptions (See Part 740 for a description of all license exceptions)

LVS: N/A

GBS: N/A

CIV: N/A

List of Items Controlled

Related Controls: See the U.S. Munitions List Category VIII (22 CFR part 121). Also see ECCN 9A610 and § 744.3 of the EAR.

Related Definitions: N/A

Items:

a. “UAVs” or unmanned “airships”, designed to have controlled flight out of the direct ‘natural vision’ of the ‘operator’ and having any of the following:

a.1. Having all of the following:

a.1.a. A maximum ‘endurance’ greater than or equal to 30 minutes but less than 1 hour;

and

a.1.b. Designed to take-off and have stable controlled flight in wind gusts equal to or exceeding 46.3 km/h (25 knots); or

a.2. A maximum ‘endurance’ of 1 hour or greater;

Technical Notes:

1. *For the purposes of 9A012.a, ‘operator’ is a person who initiates or commands the “UAV” or unmanned “airship” flight.*

2. *For the purposes of 9A012.a, ‘endurance’ is to be calculated for ISA conditions (ISO 2533:1975) at sea level in zero wind.*

3. *For the purposes of 9A012.a, ‘natural vision’ means unaided human sight, with or without corrective lenses.*

b. Related equipment and “components”, as follows:

b.1 [Reserved]

b.2. [Reserved]

b.3. Equipment or “components” “specially designed” to convert a manned “aircraft” or a manned “airship” to a “UAV” or unmanned “airship”, controlled by 9A012.a;

b.4. Air breathing reciprocating or rotary internal combustion type engines, “specially designed” or modified to propel “UAVs” or unmanned “airships”, at altitudes above 15,240 meters (50,000 feet).

15. In Supplement No. 1 to part 774, Category 9, revise ECCN 9A101 to read as follows:

9A101 Turbojet and turbofan engines, other than those controlled by 9A001, as follows (see List of Items Controlled).

License Requirements

Reason for Control: MT, AT

<i>Control(s)</i>	<i>Country Chart (See Supp. No. 1 to part 738)</i>
MT applies to entire entry	MT Column 1

AT applies to entire entry	AT Column 1
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List Based License Exceptions (See Part 740 for a description of all license exceptions)

LVS: N/A

GBS: N/A

CIV: N/A

List of Items Controlled

Related Controls: 9A101.b controls only engines for non-military unmanned aerial vehicles [UAVs] or remotely piloted vehicles [RPVs], and does not control other engines designed or modified for use in “missiles”, which are “subject to the ITAR” (see 22 CFR parts 120 through 130).

Related Definitions: N/A

Items:

a. Engines having all of the following characteristics:

a.1. ‘Maximum thrust value’ greater than 400 N (achieved un-installed) excluding civil certified engines with a maximum thrust value greater than 8,890 N (achieved un-installed);

a.2. Specific fuel consumption of $0.15 \text{ kg N}^{-1} \text{ h}^{-1}$ or less (at maximum continuous power at sea level static conditions using the ICAO standard atmosphere);

a.3. ‘Dry weight’ less than 750 kg; and

a.4. ‘First –stage rotor diameter’ less than 1 m; or

Technical Notes:

1. ‘Maximum thrust value’ in 9A101.a.1 is the manufacturer’s demonstrated maximum thrust for the engine type un-installed at sea level static conditions using the ICAO standard atmosphere. The civil type certified thrust value will be equal to or less than the manufacturer’s demonstrated maximum thrust for the engine type.

2. ‘Dry weight’ is the weight of the engine without fluids (fuel, hydraulic fluid, oil, etc.) and does not include the nacelle (housing).

3. ‘First-stage rotor diameter’ is the diameter of the first rotating stage of the engine, whether a fan or compressor, measured at the leading edge of the blade tips.

b. Engines designed or modified for use in “missiles” or UAVs with a range equal to or greater than 300 km, regardless of thrust, specific fuel consumption, ‘dry weight’ or ‘first-stage rotor diameter’.

16. In Supplement No. 1 to part 774, Category 9, revise ECCN 9A115 to read as follows:

9A115 Apparatus, devices and vehicles, designed or modified for the transport, handling, control, activation and launching of rockets, missiles, and unmanned aerial vehicles capable of achieving a “range” equal to or greater than 300 km.

License Requirements

Reason for Control: MT, AT

<i>Control(s)</i>	<i>Country Chart (See Supp. No. 1 to part 738)</i>
MT applies to entire entry	MT Column 1
AT applies to entire entry	AT Column 1

List Based License Exceptions (See Part 740 for a description of all license exceptions)

LVS: N/A

GBS: N/A

CIV: N/A

List of Items Controlled

Related Controls: See the U.S. Munitions List (22 CFR part 121). Also see ECCN

9A610.u.

Related Definitions: N/A

Items:

The list of items controlled is contained in the ECCN heading.

17. In Supplement No. 1 to part 774, Category, revise ECCN 9A515 to read as follows:

9A515 “Spacecraft” and related commodities, as follows (see List of Items Controlled).

License Requirements

Reason for Control: NS, RS, MT, AT

<i>Control(s)</i>	<i>Country Chart (See Supp. No.1 to part 738)</i>
NS applies to entire entry, except .e and .y	NS Column 1
RS applies to entire entry, except .e and .y	RS Column 1
RS applies to 9A515.e	RS Column 2
MT applies to microcircuits in 9A515.d and 9A515.e.2 when “usable in” “missiles” for protecting “missiles” against nuclear effects (e.g., Electromagnetic Pulse (EMP), X-rays, combined blast and thermal effects). MT also applies to 9A515.h when the total impulse capacity is equal to or greater than 8.41×10^5 newton seconds.	MT Column 1

AT applies to entire entry	AT Column 1
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***License Requirement Note:** The Commerce Country Chart is not used for determining license requirements for commodities classified in ECCN 9A515.a.1, .a.2, .a.3, .a.4, and .g. See § 742.6(a)(8), which specifies that such commodities are subject to a worldwide license requirement.*

List Based License Exceptions (See Part 740 for a description of all license exceptions)

LVS: \$1500

GBS: N/A

CIV: N/A

Special Conditions for STA

STA: (1) Paragraph (c)(1) of License Exception STA (§ 740.20(c)(1) of the EAR) may not be used for “spacecraft” in ECCN 9A515.a.1, .a.2, .a.3, or .a.4, or items in 9A515.g, unless determined by BIS to be eligible for License Exception STA in accordance with § 740.20(g) (License Exception STA eligibility requests for certain 9x515 and “600 series” items). (2) License Exception STA may not be used if the “spacecraft” controlled in ECCN 9A515.a.1, .a.2, .a.3, or .a.4 contains a separable or removable propulsion system enumerated in USML Category IV(d)(2) or USML Category

XV(e)(12) and designated MT. (3) Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any item in 9A515.

List of Items Controlled

Related Controls: Spacecraft, launch vehicles and related articles that are enumerated in the USML, and technical data (including “software”) directly related thereto, and all services (including training) directly related to the integration of any satellite or spacecraft to a launch vehicle, including both planning and onsite support, or furnishing any assistance (including training) in the launch failure analysis or investigation for items in ECCN 9A515.a, are “subject to the ITAR.” All other “spacecraft,” as enumerated below and defined in § 772.1, are subject to the controls of this ECCN. See also ECCNs 3A001, 3A002, 3A991, 3A992, 6A002, 6A004, 6A008, and 6A998 for specific “space-qualified” items, 7A004 and 7A104 for star trackers, and 9A004 for the International Space Station (ISS), the James Webb Space Telescope (JWST), and “specially designed” “parts” and “components” therefor. See USML Category XI(c) for controls on “Monolithic Microwave Integrated Circuit” (“MMIC”) amplifiers that are “specially designed” for defense articles. See ECCN 9A610.g for pressure suits used for high altitude aircraft.

Related Definitions: ‘Microcircuit’ means a device in which a number of passive or active elements are considered as indivisibly associated on or within a continuous structure to perform the function of a circuit.

Items:

“Spacecraft” and other items described in ECCN 9A515 remain subject to the EAR even if exported, reexported, or transferred (in-country) with defense articles “subject to the ITAR” integrated into and included therein as integral parts of the item. In all other cases, such defense articles are subject to the ITAR. For example, a 9A515.a “spacecraft” remains “subject to the EAR” even when it is exported, reexported, or transferred (in-country) with a “hosted payload” described in USML Category XV(e)(17) incorporated therein. In all other cases, a “hosted payload” performing a function described in USML Category XV(a) always remains a USML item. The removal of the defense article subject to the ITAR from the spacecraft is a retransfer under the ITAR and would require an ITAR authorization, regardless of the CCL authorization the spacecraft is exported under. Additionally, transfer of technical data regarding the defense article subject to the ITAR integrated into the spacecraft would require an ITAR authorization.

a. “Spacecraft,” including satellites, and space vehicles, whether designated developmental, experimental, research or scientific, not enumerated in USML Category XV or described in ECCN 9A004.u or .w, that:

a.1. Have electro-optical remote sensing capabilities and having a clear aperture greater than 0.35 meters, but less than or equal to 0.50 meters;

a.2. Have remote sensing capabilities beyond NIR (*i.e.*, SWIR, MWIR, or LWIR);

a.3. Have radar remote sensing capabilities (*e.g.*, AESA, SAR, or ISAR) having a center frequency equal to or greater than 1.0 GHz, but less than 10.0 GHz and having a bandwidth equal to or greater than 100 MHz, but less than 300 MHz;

a.4. Provide space-based logistics, assembly, or servicing of another “spacecraft”; or

a.5. Are not described in ECCN 9A515.a.1, .a.2, .a.3 or .a.4.

Note: *ECCN 9A515.a includes commercial communications satellites, remote sensing satellites, planetary rovers, planetary and interplanetary probes, and in-space habitats, not identified in ECCN 9A004 or USML Category XV(a).*

b. Ground control systems and training simulators “specially designed” for telemetry, tracking, and control of the “spacecraft” controlled in paragraphs 9A004.u or 9A515.a.

c. [Reserved]

d. Microelectronic circuits (*e.g.*, integrated circuits, microcircuits, or MOSFETs) and discrete electronic components rated, certified, or otherwise specified or described as meeting or exceeding all the following characteristics and that are “specially designed” for defense articles, “600 series” items, or items controlled by ECCNs 9A004.v or 9A515:

d.1. A total dose of 5×10^5 Rads (Si) (5×10^3 Gy (Si));

- d.2. A dose rate upset threshold of 5×10^8 Rads (Si)/sec (5×10^6 Gy (Si)/sec);
 - d.3. A neutron dose of 1×10^{14} n/cm² (1 MeV equivalent);
 - d.4. An uncorrected single event upset sensitivity of 1×10^{-10} errors/bit/day or less, for the CRÈME-MC geosynchronous orbit, Solar Minimum Environment for heavy ion flux; and
 - d.5. An uncorrected single event upset sensitivity of 1×10^{-3} errors/part or less for a fluence of 1×10^7 protons/cm² for proton energy greater than 50 MeV.
- e. Microelectronic circuits (*e.g.*, integrated circuits, microcircuits, or MOSFETs) and discrete electronic components that are rated, certified, or otherwise specified or described as meeting or exceeding the characteristics in either paragraph e.1 or e.2, AND “specially designed” for defense articles controlled by USML Category XV or items controlled by ECCNs 9A004.u or 9A515:
- e.1. A total dose $\geq 1 \times 10^5$ Rads (Si) (1×10^3 Gy(Si)) and $< 5 \times 10^5$ Rads (Si) (5×10^3 Gy(Si)); and a single event effect (SEE) (*i.e.*, single event latchup (SEL), single event burnout (SEB), or single event gate rupture (SEGR)) immunity to a linear energy transfer (LET) ≥ 80 MeV-cm²/mg; or

e.2. A total dose $\geq 5 \times 10^5$ Rads (Si) (5×10^3 Gy (Si)) and not described in 9A515.d.

Note 1 to 9A515.d and .e: Application specific integrated circuits (ASICs), integrated circuits developed and produced for a specific application or function, specifically designed or modified for defense articles and not in normal commercial use are controlled by Category XI(c) of the USML regardless of characteristics.

Note 2 to 9A515.d and .e: See 3A001.a for controls on radiation-hardened microelectronic circuits “subject to the EAR” that are not controlled by 9A515.d or 9A515.e.

f. Pressure suits (*i.e.*, space suits) capable of operating at altitudes 55,000 feet above sea level.

g. Remote sensing components “specially designed” for “spacecraft” described in ECCNs 9A515.a.1 through 9A515.a.4 as follows:

g.1. Space-qualified optics (*i.e.*, lens, mirror, membrane having active properties (*e.g.*, adaptive, deformable)) with the largest lateral clear aperture dimension equal to or less than 0.35 meters; or with the largest clear aperture dimension greater than 0.35 meters but less than or equal to 0.50 meters;

g.2. Optical bench assemblies “specially designed” for ECCN 9A515.a.1, 9A515.a.2, 9A515.a.3, or 9A515.a.4 “spacecraft;” or

g.3. Primary, secondary, or hosted payloads that perform a function of ECCN 9A515.a.1, 9A515.a.2, 9A515.a.3, or 9A515.a.4 “spacecraft.”

h. Spacecraft thrusters using bi-propellants or mono-propellants that provide thrust equal to or less than 150 lbf (*i.e.*, 667.23 N) vacuum thrust.

i. through w. [RESERVED]

x. “Parts,” “components,” “accessories” and “attachments” that are “specially designed” for defense articles controlled by USML Category XV or items controlled by 9A515, and that are NOT:

x.1. Enumerated or controlled in the USML or elsewhere within ECCNs 9A515 or 9A004;

x.2. Microelectronic circuits and discrete electronic components;

x.3. Described in ECCNs 7A004 or 7A104;

x.4. Described in an ECCN containing “space-qualified” as a control criterion (*i.e.*, 3A001.b.1, 3A001.e.4, 3A002.g.1, 3A991.o, 3A992.b.3, 6A002.a.1, 6A002.b.2, 6A002.d.1, 6A004.c and .d, 6A008.j.1, 6A998.b , or 7A003.d.2);

x.5. Microwave solid state amplifiers and microwave assemblies (refer to ECCN 3A001.b.4 for controls on these items);

x.6. Travelling wave tube amplifiers (refer to ECCN 3A001.b.8 for controls on these items); or

x.7. Elsewhere specified in ECCN 9A515.y.

***Note to 9A515.x:** “Parts,” “components,” “accessories,” and “attachments” specified in USML subcategory XV(e) or enumerated in other USML categories are subject to the controls of that paragraph or category.*

y. Items that would otherwise be within the scope of ECCN 9A515.x but that have been identified in an interagency-cleared commodity classification (CCATS) pursuant to § 748.3(e) as warranting control in 9A515.y.

y.1. Discrete electronic components not specified in 9A515.e;

y.2. Space grade or for spacecraft applications thermistors;

y.3. Space grade or for spacecraft applications RF microwave bandpass ceramic filters (Dielectric Resonator Bandpass Filters);

y.4. Space grade or for spacecraft applications hall effect sensors;

y.5. Space grade or for spacecraft applications subminiature (SMA and SMP) plugs and connectors, TNC plugs and cable and connector assemblies with SMA plugs and connectors; and

y.6. Space grade or for spacecraft applications flight cable assemblies.

18. In Supplement No. 1 to part 774, Category 9, revise ECCN 9A610 to read as follows:

9A610 Military aircraft and related commodities, other than those enumerated in 9A991.a (see List of Items Controlled).

License Requirements

Reason for Control: NS, RS, MT, AT, UN

<i>Control(s)</i>	<i>Country Chart (See Supp. No. 1 to part 738)</i>
NS applies to entire entry except: 9A610.b; parts and components controlled in 9A610.x if being exported or reexported for use in an aircraft controlled in 9A610.b; and 9A610.y	NS Column 1
RS applies to entire entry except: 9A610.b; parts and components controlled in 9A610.x if being exported or reexported for use in an aircraft controlled in 9A610.b; and 9A610.y	RS Column 1
MT applies to 9A610.t, .u, .v, and .w	MT Column 1
AT applies to entire entry	AT Column 1
UN applies to entire entry except 9A610.y	See § 746.1(b) for UN controls

List Based License Exceptions (See Part 740 for a description of all license exceptions)

LVS: \$1500

GBS: N/A

CIV: N/A

Special Conditions for STA

STA: (1) Paragraph (c)(1) of License Exception STA (§ 740.20(c)(1) of the EAR) may not be used for any item in 9A610.a (i.e., “end item” military aircraft), unless determined by BIS to be eligible for License Exception STA in accordance with § 740.20(g) (License Exception STA eligibility requests for “600 series” end items). (2) Paragraph (c)(2) of License Exception STA (§ 740.20(c)(2) of the EAR) may not be used for any item in 9A610.

List of Items Controlled

Related Controls: (1) Military aircraft and related articles that are enumerated in USML Category VIII, and technical data (including software) directly related thereto, are subject to the ITAR. (2) See ECCN 0A919 for controls on foreign-made “military commodities” that incorporate more than a de minimis amount of U.S.-origin “600 series” controlled content. (3) See USML Category XIX and ECCN 9A619 for controls on military aircraft gas turbine engines and related items.

Related Definitions: In paragraph .y of this entry, the term ‘fluid’ includes liquids and gases.

Items:

a. 'Military Aircraft' "specially designed" for a military use that are not enumerated in USML paragraph VIII(a).

***Note 1:** For purposes of paragraph .a the term 'military aircraft' means the LM-100J aircraft and any aircraft "specially designed" for a military use that are not enumerated in USML paragraph VIII(a). The term includes: Trainer aircraft; cargo aircraft; utility fixed wing aircraft; military helicopters; observation aircraft; military non-expansive balloons and other lighter than air aircraft; and unarmed military aircraft, regardless of origin or designation. Aircraft with modifications made to incorporate safety of flight features or other FAA or NTSB modifications such as transponders and air data recorders are "unmodified" for the purposes of this paragraph .a.*

***Note 2:** 9A610.a does not control 'military aircraft' that:*

a. Were first manufactured before 1946;

b. Do not incorporate defense articles enumerated or otherwise described on the U.S. Munitions List, unless the items are required to meet safety or airworthiness standards of a Wassenaar Arrangement Participating State; and

c. Do not incorporate weapons enumerated or otherwise described on the U.S. Munitions List, unless inoperable and incapable of being returned to operation.

b. L-100 aircraft manufactured prior to 2013.

c. - d. [Reserved]

e. Mobile aircraft arresting and engagement runway systems for aircraft controlled by either USML Category VIII(a) or ECCN 9A610.a.

- f. Pressure refueling equipment and equipment that facilitates operations in confined areas, “specially designed” for aircraft controlled by either USML paragraph VIII(a) or ECCN 9A610.a.
- g. Aircrew life support equipment, aircrew safety equipment and other devices for emergency escape from aircraft controlled by either USML paragraph VIII(a) or ECCN 9A610.a.
- h. Parachutes, paragliders, complete parachute canopies, harnesses, platforms, electronic release mechanisms, “specially designed” for use with aircraft controlled by either USML paragraph VIII(a) or ECCN 9A610.a, and “equipment” “specially designed” for military high altitude parachutists, such as suits, special helmets, breathing systems, and navigation equipment.
- i. Controlled opening equipment or automatic piloting systems, designed for parachuted loads.
- j. Ground effect machines (GEMS), including surface effect machines and air cushion vehicles, “specially designed” for use by a military.
- k. through s. [Reserved]
- t. Composite structures, laminates, and manufactures thereof “specially designed” for unmanned aerial vehicles controlled under USML Category VIII(a) with a range equal to or greater than 300 km.

***Note to paragraph .t:** Composite structures, laminates, and manufactures thereof “specially designed” for unmanned aerial vehicles controlled under USML Category VIII(a) with a maximum range less than 300 km are controlled in paragraph .x of this entry.*

u. Apparatus and devices “specially designed” for the handling, control, activation and non-ship-based launching of UAVs controlled by either USML paragraph VIII(a) or ECCN 9A610.a, and capable of a range equal to or greater than 300 km.

Note to paragraph .u: Apparatus and devices “specially designed” for the handling, control, activation and non-ship-based launching of UAVs controlled by either USML paragraph VIII(a) or ECCN 9A610.a with a maximum range less than 300 km are controlled in paragraph .x of this entry.

v. Radar altimeters designed or modified for use in UAVs controlled by either USML paragraph VIII(a) or ECCN 9A610.a., and capable of delivering at least 500 kilograms payload to a range of at least 300 km.

Note to paragraph .v: Radar altimeters designed or modified for use in UAVs controlled by either USML paragraph VIII(a) or ECCN 9A610.a. that are not capable of delivering at least 500 kilograms payload to a range of at least 300 km are controlled in paragraph .x of this entry.

w.1. Pneumatic hydraulic, mechanical, electro-optical, or electromechanical flight control systems (including fly-by-wire and fly-by-light systems) and attitude control equipment designed or modified for UAVs controlled by either USML paragraph VIII(a) or ECCN 9A610.a., and capable of delivering at least 500 kilograms payload to a range of at least 300 km.

Note to paragraph .w.1: Pneumatic, hydraulic, mechanical, electro-optical, or electromechanical flight control systems (including fly-by-wire and fly-by-light systems) and attitude control equipment designed or modified for UAVs controlled by either USML paragraph VIII(a) or ECCN 9A610.a., not capable of delivering at least 500 kilograms payload to a range of at least 300 km are controlled in paragraph .x of this entry.

w.2. Flight control servo valves designed or modified for the systems in 9A610.w.1. and designed or modified to operate in a vibration environment greater than 10g rms over the entire range between 20Hz and 2 kHz.

Note to paragraph .w: Paragraphs 9A610.w.1. and 9A610.w.2. include the systems, equipment and valves designed or modified to enable operation of manned aircraft as unmanned aerial vehicles.

x. “Parts,” “components,” “accessories,” and “attachments” that are “specially designed” for a commodity enumerated or otherwise described in ECCN 9A610 (except for 9A610.y) or a defense article enumerated or otherwise described in USML Category VIII and not elsewhere specified on the USML or in 9A610.y, 9A619.y, or 3A611.y.

y. Specific “parts,” “components,” “accessories,” and “attachments” “specially designed” for a commodity subject to control in this entry, ECCN 9A619, or for a defense article in USML Categories VIII or XIX and not elsewhere specified in the USML or the CCL, and other aircraft commodities “specially designed” for a military use, as follows, and “parts,” “components,” “accessories,” and “attachments” “specially designed” therefor:

y.1. Aircraft tires;

y.2. Analog gauges and indicators;

y.3. Audio selector panels;

y.4. Check valves for hydraulic and pneumatic systems;

- y.5. Crew rest equipment;
- y.6. Ejection seat mounted survival aids;
- y.7. Energy dissipating pads for cargo (for pads made from paper or cardboard);
- y.8. Fluid filters and filter assemblies;
- y.9. Galleys;
- y.10. Fluid hoses, straight and unbent lines (for a commodity subject to control in this entry or defense article in USML Category VIII), and fittings, couplings, clamps (for a commodity subject to control in this entry or defense article in USML Category VIII) and brackets therefor;
- y.11. Lavatories;
- y.12. Life rafts;
- y.13. Magnetic compass, magnetic azimuth detector;
- y.14. Medical litter provisions;
- y.15. Cockpit or cabin mirrors;
- y.16. Passenger seats including palletized seats;
- y.17. Potable water storage systems;
- y.18. Public address (PA) systems;
- y.19. Steel brake wear pads (does not include sintered mix or carbon/carbon materials);

- y.20. Underwater locator beacons;
- y.21. Urine collection bags/pads/cups/pumps;
- y.22. Windshield washer and wiper systems;
- y.23. Filtered and unfiltered panel knobs, indicators, switches, buttons, and dials;
- y.24. Lead-acid and Nickel-Cadmium batteries;
- y.25. Propellers, propeller systems, and propeller blades used with reciprocating engines;
- y.26. Fire extinguishers;
- y.27. Flame and smoke/CO₂ detectors;
- y.28. Map cases;
- y.29. ‘Military Aircraft’ that were first manufactured from 1946 to 1955 that do not incorporate defense articles enumerated or otherwise described on the U.S. Munitions List, unless the items are required to meet safety or airworthiness standards of a Wassenaar Arrangement Participating State; and do not incorporate weapons enumerated or otherwise described on the U.S. Munitions List, unless inoperable and incapable of being returned to operation;
- y.30. “Parts,” “components,” “accessories,” and “attachments,” other than electronic items or navigation equipment, for use in or with a commodity controlled by ECCN 9A610.h;
- y.31. Identification plates and nameplates; and
- y.32. Fluid manifolds.

Dated: August 24, 2018.

Richard E. Ashooh,
Assistant Secretary
for Export Administration.

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